



Appln. No.: 10/016,173

Amendment Dated: September 29, 2003

Reply to Office Action of June 27, 2003

KPG-5059US

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A negative-working image forming process which comprises the steps of:

(1) flood exposing with actinic radiation a photosensitive assembly that comprises:

(a) a hydrophilic support which can be used as a lithographic base and having thereon;

(b) a first layer comprising:

(i) at least one polymer that is soluble or dispersible in an aqueous alkaline solution, wherein the polymer in the first layer is a copolymer having at least one functional group selected from the group consisting of carboxylic acid, N-substituted cyclic imide, and amide;

(c) a second layer on top of the first layer, the second layer comprising at least one o-quinonediazide compound; whereby the flood exposure causes converts the at least one o-quinonediazide compound to be converted to the corresponding indenecarboxylic acid compound; and

(d) at least one photothermal conversion material in either the first layer, or the second layer, or both layers, wherein the at least one photothermal conversion material is at least one infrared absorbing compound;

(2) imagewise exposing the flood exposed photosensitive assembly with infrared radiation to thereby convert and converting the indenecarboxylic acid compound in the second layer in the imagewise exposed areas to the corresponding indene compound; and

(3) developing the imagewise exposed photosensitive assembly with an alkaline developing solution ~~to dissolve and dissolving~~ out the imagewise unexposed areas of the second layer and the areas of the first layer underlying the imagewise unexposed areas of the second layer ~~and thereby produce a negative working image.~~

2. (original) The process of claim 1 wherein the support is a polyester film.

3. (original) The process of claim 1 wherein the support is a sheet of anodized aluminum.

4. (cancelled)

5. (original) The process of claim 1 wherein the o-quinonediazide compound comprises either (i) a mixture of a phenolic resin and an o-naphthoquinone diazide compound; (ii) a reaction product of a resin and an o-naphthoquinone diazide compound; or (iii) a mixture of (i) and (ii).

6. (cancelled)

7. (currently amended) The process of claim ~~6~~1 wherein the at least one infrared absorbing compound is in the second layer.

8. (cancelled)

9. (original) The process of claim 1 wherein the thickness of the first layer is from about 0.5 to about 2.5 microns.

10. (original) The process of claim 1 wherein the thickness of the second layer is from about 0.5 to about 2.5 microns.

11. (currently amended) A negative-working image forming process which comprises the steps of:

(1) flood exposing with ~~UV~~ ultraviolet radiation a photosensitive assembly that comprises:

(a) an aluminum plate hydrophilic support which can be used as a lithographic base and having thereon;

(b) a first layer comprising:

(i) at least one copolymer that is soluble or dispersible in an aqueous alkaline solution and has at least one functional group selected from the group consisting of carboxylic acid, N-substituted cyclic imide, amide, and mixtures thereof;

(c) a second layer on top of the first layer, the second layer comprising at least one o-quinonediazide compound that comprises either (i) a mixture of a phenolic resin and an o-naphthoquinone diazide compound; (ii) a reaction product of a resin and an o-naphthoquinone diazide compound; or (iii) a mixture of (i) and (ii); whereby the flood-UV ultraviolet exposure ~~causes converts~~ the at least one o-quinonediazide compound ~~to be converted~~ to the corresponding indenecarboxylic acid compound; said second layer ~~additionally-containing comprising~~ an infrared absorbing compound;

(2) imagewise exposing the flood-UV ultraviolet exposed photosensitive assembly with infrared radiation ~~to thereby convert and converting~~ the indenecarboxylic acid compound in the second layer in the imagewise exposed areas to the corresponding indene compound; and

(3) developing the imagewise exposed photosensitive assembly with an alkaline developing solution ~~to dissolve and dissolving~~ out the imagewise unexposed areas of the second layer and the areas of the first layer underlying the imagewise unexposed areas of the second layer ~~and thereby producing a negative working image.~~

12. (original) The process of claim 11 wherein copolymer in the first layer comprises at least 90% by weight of the first layer.

13. (currently amended) The process of claim 11 wherein the amount of infrared absorbing compound ~~comprises from about 5 to about 25 weight percent~~ of ~~in the second layer is sufficient to provide an optical density of at least 0.5 in that layer.~~

14. (original) The process of claim 11 wherein the developing solution has a pH from about 8 to about 13.5.

15. (currently amended) A negative-working image-forming process which comprises the steps of:

(1) flood exposing with ~~UV~~ ultraviolet radiation a photosensitive assembly that comprises:

(a) an anodized aluminum plate hydrophilic support which can be used as a lithographic base and having thereon;

(b) a first layer comprising:

(i) ~~a~~ terpolymer of methacrylamide, methacrylic acid and N-phenylmaleimide that is soluble or dispersible in an aqueous alkaline solution;

(c) a second layer on top of the first layer, the second layer comprising at least one o-quinonediazide compound that comprises either (i) a mixture of a phenolic resin and an o-naphthoquinone diazide compound; (ii) a reaction product of a resin and an o-naphthoquinone diazide compound; or (iii) a mixture of (i) and (ii); whereby the flood-~~UV~~ ultraviolet exposure ~~causes converts~~ the at least one o-quinonediazide compound ~~to be converted~~ to the corresponding indenecarboxylic acid compound; said second layer ~~additionally containing comprising~~ an infrared absorbing compound;

(2) imagewise exposing the flood-~~UV~~ ultraviolet exposed photosensitive assembly with infrared laser radiation ~~to thereby convert and converting~~ the indenecarboxylic acid compound in the second layer in the imagewise exposed areas to the corresponding indene compound; and

(3) developing the imagewise exposed photosensitive assembly with an alkaline developing solution ~~to dissolve and dissolving~~ out the imagewise unexposed areas of the second layer and the areas of the first layer underlying the imagewise unexposed areas of the second layer ~~and thereby producing a negative working image.~~

16. (currently amended) The process of claim 15 wherein the first layer ~~additionally contains comprises~~ a colorant and a coating improver.

17. (original) The process of claim 15 wherein the terpolymer in the first layer comprises mole fractions of 35:20:45 of the methacrylamide, methacrylic acid and N-phenylmaleimide.

18. (cancelled)

19. (new) The process claim 1 wherein the polymer in the first layer is a copolymer of N-phenyl maleimide, methacrylamide and methacrylic acid.

20. (new) The process claim 19 wherein the polymer in the first layer comprises about 25 to 75 mol% of N-phenylmaleimide; about 10 to about 50 mol% of methacrylamide; and about 5 to about 30 mol% of methacrylic acid.

21. (new) The process of claim 11 wherein the at least one copolymer in the first layer comprises about 35 to about 60 mol% of N-phenylmaleimide; about 15 to about 40 mol% of methacrylamide; and about 10 to about 30 mol% of methacrylic acid.

22. (new) The process of claim 21 wherein the polymer in the first layer comprises about 35 to about 60 mol% of N-phenylmaleimide; about 15 to about 40 mol% of methacrylamide; and about 10 to about 30 mol% of methacrylic acid.

23. (new) The process of claim 15 wherein the terpolymer in the first layer comprises about 35 to about 60 mol% of N-phenylmaleimide; about 15 to about 40 mol% of methacrylamide; and about 10 to about 30 mol% of methacrylic acid.